Remarks

Claims 2-3, 8-12, 14-17, 19-29, 30, 35, 38-42, 45-60, 72, 77 and 78 without prejudice. Cancellation of these claims is for the purpose of reducing the costs of filing an RCE. New claims 81-85 have been added. Support for these claims is found in the Detailed Description of the Invention, at least on page 4 and page 10. No new matter has been added.

An interview was conducted on Thursday, August 10, 2005 at 1:30 central/2:30 eastern time with Examiner Gladys Corcoran, attorneys Richard Arrett and Lisa Ryan-Lindquist and inventors Randall Boudouris and Ray Richards.

During the interview, a new reference, U.S. Patent No. 6,881,450 to Texier, issued April 19, 2005 was discussed. This reference was brought to the attention of the attorney of record, Lisa Ryan-Lindquist, during a brief teleconference with the examiner.

Texier, U.S. Patent No. 6,881,450 ('450)

Applicants submit that Texier discloses and claims (see claim 1) a method of magnetically linking a ferromagnetic object to a partially magnetized coating material made by applying a coating to a surface of a continuously-moving medium. The method includes the steps of providing a coating material by mixing a binder material suitable for being spread substantially and regularly over the surface and a ferromagnetic component, the binder material being a hot melt adhesive, providing a continuously-moving medium having a top surface to be substantially coated, the surface capable of receiving a substantially and regularly spread coating material, passing the coating material and continuously-moving medium between rollers to form a substantially constant thickness of the coating material substantially covering the top surface and allowing the coating material to set to form the coated medium as a magnetizable component, wherein the medium that is coated is one of a paper, a card, wallpaper, a flexible plastic sheet, a rigid plastic sheet, and walls, partially magnetizing the coating material during continuous movement of the medium to create a magnetized area and an unmagnetized area and

magnetically and temporarily linking a ferromagnetic object to the magnetized area so that the coated medium and ferromagnetic object are held together by magnetic attraction.

Claim 1, 4-7, 13, 31-34, 36, 37, 75 and79-81

Claim 1 of the present application has been amended and is directed to a method of making a magnetic assembly by providing a magnetic hot melt composition at an elevated temperature *with an extruder*, said magnetic hot melt composition comprising about 75 wt-% to about 95 wt-% of at least one magnetic material and about 5 wt-% to about 25 wt-% of at least one thermoplastic polymer and directly applying the magnetic hot melt composition *with a slot die head* at an elevated temperature when it is pliable to a printable substrate layer, the printable substrate layer formed of paper, paper products or paste board.

Applicants submit that FIG. 2 of Texier, illustrates a diagram of a device for applying adhesive and magnetizing card. With respect to FIG. 2, Texier discloses the following:

> The card 9 passes beneath a machine 11 for dispensing hot-melt adhesive. The machine 11 can be a nozzle type machine or advantageously a roller type machine, for example a machine including a 3960 Multiscan® sold by Nordson and connected via 2.40 meter long automatic heating hoses to automatic guns sold by the same company under the reference H20. The fluid coating (hot when a hot-melt adhesive is used) is inserted, for example, between two rollers and flows through a calibrated gap left between the rollers. The hot adhesive containing ferromagnetic particles is deposited on the card 9 travelling in the direction of arrow 13 at a speed that can lie in the range 20 meters per minute (m/min) to 250 m/min, and preferably lying in the range 30 m/min to 150 m/min.
>
> Column 4, lines 33-46

Applicants submit that Texier discloses neither extrusion nor slot die coating.

Rather, Texier discloses that "[t]he machine 11 can be a nozzle type machine or advantageously a roller type machine, for example, a machine including a 3960 Multiscan® sold by Nordson and connected via a 2.40 meter long automatic heating hoses to automatic guns sold by the same company under the reference H20."

Applicants are hereby submitting a declaration by Randall Boudouris. Included with the declaration is a brochure, *Technical Data for Series 3960 Melters,* which has been marked Exhibit A. Please note on page D 1-1, that these machines depend on a ¾ hp piston DC Gear Pump. Therefore, the machines discloses by Texier are not extruders. Gear pumps do not induce a high shear rate whereas extruders do. Applicants are including several webpages from the website, http://www.nordson.com.pl/pdf/Dokumentacje/Katalogi/ADH_SEAL2001.PDF, which discusses the Nordson 3960 Melter. The shear rate of an extruder can be controlled by varying the RPM of the screw. See http://www.egr.msu.edu/classes/che472/Extruder03.pdf, a copy of the webpage of which is included herewith.

As can be seen at page D 1-1 of the *Technical Data for Series 3960 Metlers* brochure, the maximum viscosity which can be accommodated by the 3960 Melter is 30,000 CPS using the DC gear pump, and the maximum temperature is 450°F.

Upon the request of Randall Boudouris, Dr. Victor Tan of the University of New Jersey, Institute of Technology, obtained data for three different compositions:

(1) 100% ethylene vinyl acetate (EVA) (400 Melt Index, 28% vinyl acetate
(2) 85% ferrite/15% EVA (400 MI, 28% VA)
(3) 75% ferrite/25% EVA (400 MI, 28% VA)

The viscosity data obtained at a temperature of 446°F (230°C) under high shear rate conditions using a capillary rheometer is shown in Exhibit B, Report on the Rheological Characterization of Three EVA and EVA/Ferrite Compounds.

The viscosity for the EVA sample (1) is presented in Table 1. EVA is suitable for use in the Nordson 3960 Melter, which is as expected.

The viscosity data for 85% ferrite/15% EVA blend is presented in Table 2. As can be seen from the true viscosity in the last column, the minimum viscosity obtained under extremely high shear conditions (6873 reciprocal seconds) is approximately 61,000 cPs (61.07 Pa-s), more than double the maximum recommended for use in the Nordson

3960 Melter, which induces no shear. Under non-shear thinning conditions, the viscosity will be even higher, therefore making it impossible to employ the Nordson 3960 Melter for this type of magnetic hot melt composition.

Table 3 contains the data obtained for a 75% ferrite/25% EVA blend. Under even higher shear rate conditions (15,566 reciprocal seconds) the viscosity at 446° F is almost 20,000. At a shear rate of 3621 reciprocal seconds, the viscosity is already higher than recommended for the Nordson 3960 Melter. Such shear rates cannot be obtained in the Nordson 3960 Melter. Consequently, the Nordson 3960 Melter could not be employed for this composition.

Applicants submit that while viscosity tests were not conducted for an 80% ferrite/20% EVA blend, one can easily extrapolate between the 75% ferrite/25% EVA blend and the 85% ferrite/15% EVA blend, and see that such a blend would also clearly be too high in viscosity for the Nordson 3960 Melter.

Furthermore, for the claims reciting 80% or more ferrite, it is very clear that such compositions cannot be employed in the method of Texier, as the Nordson 3960 Melter, is not recommended for viscosities of more than 30,000 cPs.

Applicants submit that the other binders suggested for use in hot melt adhesives by Texier, i.e. polyolefins, butadiene styrene, or isoprene styrene, and most ethylene acrylics have even higher viscosities than EVA (28-400). Applicants have attached technical information from MatWeb, a materials website. Therefore, Applicants submit that Texier, has suggested no way in which to select a polymer which may be employed in his method.

Furthermore, the Nordson 3960 Premelter has a DC gear pump. Gear pumps cannot be used with abrasive fillers or highly filled materials. Such materials will jam the pump. Therefore, there is no teaching as to how to apply the equipment with other than a Nordson 3960 Premelter. A roller type machine as disclosed at column 4, lines 33-46, does not suggest how to apply the ferromagnetic adhesive to the substrate. As suggested by Texier, the fluid coating is inserted, for example, between two rollers and flows through a calibrated gap left between the rollers. However, one must still have a method to actually get the adhesive to the rollers in order to insert it between the rollers.

See the attached Exhibits C and D, Handbook of Adhesives, Third Edition, Skeist, Irving, Van Norstrand Reinhold (1990), Chapter 46, pages 736-737 and Exhibit D.

In summary, Applicants submit that Texier discloses neither extrusion, nor slot die coating, both of which are recited in independent claim 1, and therefore claim 1 is patentable over Texier.

Applicants submit that the ranges recited in claims 82 and 84, cannot be employed in the method of Texier, because the viscosities are too high and therefore independent claims 82 and 84 are patentable over Texier.

Therefore, based on the foregoing, independent claims 1, 82 and 84 are patentable over Texier, U.S. Patent No. 6,881,450.

Claims 4-7, 13, 31-34, 36, 37, 75 and 79-81, depend from claim 1 and are patentable for at least the reasons that claim 1 is patentable.

Claims 81-85

These claims recite a method in which the composition has about 80 wt-% or more magnetic material and about 20% or less of binder. The Examiner has suggested that Texier motivates use of amounts higher than 75%. This is not so.

Texier states at column 3, lines 24-29, with respect the hot melt composition that, "[a]dvantageously, the amount of electromagnetic filler that is used is the maximum that can be accepted by the binder, for example six units by weight of ferromagnetic powder for two units by weight of binder. For example 200 grams (g) to 850 g of iron oxide can be deposited per square meter (m^2) of card, e.g. 800 g/m^2." Since deposit thickness is not given, the examples of iron oxide loading on card stock does not provide any useful information as to the amount of electromagnetic filler that may be used. Consequently the only useful items of information on formulation from this passage are that it should be the maximum, and that 6:2 (i.e. 75%) can be achieved. This is the ***only*** example given by Texier of the amount of loading that a binder could accept. There is no statement that this is less than the maximum that can be loaded into a binder or that a higher loading may be obtainable in some circumstances.

Further, Texier suggests, the following for binders:

> By way of example, it is possible to use adhesives in dispersion, in particular acrylic, vinyl acetate, copolymer of vinyl acetate and acrylic ethylene or styrene, adhesives in solution of the vinyl acetate, acrylic, or acrylic styrene type, vegetable adhesives in particular of the starch type, dextrin, or casein type, or advantageously hot-melt adhesives made in particular on the basis of ethylene vinyl acetate, acrylic ethylene, polyolefin, butadiene styrene, or isoprene styrene.
>
> Column 2, lines 54-61

Here there is no indication of any preference from amongst these various polymers.

In order to satisfy 35 U.S.C. §112, an inventor is obligated, in the specification, to set forth the best mode contemplated by the inventor of carrying out his invention. A patent fails to satisfy the best mode requirement if it fails to disclose aspects of making or using invention, and such undisclosed matter materially affects properties of claimed invention, or if patent does not adequately disclose preferred embodiment of invention. See *Bayer AG v. Schein Pharmaceuticals Inc.,* 64 USPQ2d 1001 (Federal Circuit 2002).

Texier teaches that the loading should be the most that the binder can hold but gives the skilled person no basis to select from the list of resins provided above. If Texier contemplated that 75% was the maximum loading that a binder could hold, then he can have satisfied the best mode simply by including the binder in his list that he contemplated could be loaded to this amount. Any member on the list will do. However, if Texier thought that the maximum magnetic particle loading would be higher than 75% he has not satisfied the best mode because Texier gives the skilled person nothing that would lead to experimentation with higher loadings for any particular binder. Viewed in the manner asserted by the Examiner, the skilled person might select the wrong resins from which to experiment to obtain the maximum loading, find one works at 75%, but not that will accept higher and so never arrive at the best mode.

The latter position (that a higher loading than 75% was contemplated) is a reconstruction of the Texier patent that cannot be asserted on the record of this application.

A patent is presumed valid, 35 U.S.C. §282, and can be proved invalid only by clear and convincing evidence. *United States Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1563 [41 USPQ2d 1225] (Fed. Cir. 1997).

> The specification must set forth the best mode known to the inventor for practice of the invention claimed in the patent. 35 U.S.C. §112. Invalidation for failure to set forth the best mode requires (1) the inventor knew of a better mode than was disclosed, and (2) the inventor concealed that better mode. *Chemcast Corp. v. Arco Indus. Corp.*, 913 F.2d 923, 927-28 [16 USPQ2d 1033] (Fed. Cir. 1990). Both parts of the best mode test must be met in order to invalidate the patent. *Spectra-Physics*, 827 F.2d at 1535.
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> As explained in *In re Gay*, 309 F.2d 769, 772 [135 USPQ 311] (CCPA 1962), the best mode requirement precludes inventors "from applying for patents while at the same time concealing from the public preferred embodiments of their inventions which they have in fact conceived." See *Randomex, Inc. v. Scopus Corp.*, 849 F.2d 585, 588 [7 USPQ2d 1050] (Fed. Cir. 1988) ("It is concealment of the best mode of practicing the claimed invention that section 112 ¶ 1 is designed to prohibit."); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384-85 [231 USPQ 81] (Fed. Cir. 1986) ("[I]n order to find that the best mode requirement is not satisfied, it must be shown that the applicant knew of and concealed a better mode than he disclosed.").

High Concrete Structures Inc. v. New Enterprise Stone and Lime Co., 71 USPQ2d 1948 (Fed. Cir. 2004). Since patents are presumed valid, the best mode is presumed to disclosed, and the Examiner has a high burden to demonstrate that the best mode was not disclosed by Texier. In the absence of specific credible evidence of suppression of Texier's best mode, the Examiner's reading of the Texier patent is impermissible as a matter of law.

Further, since Texier asserts that the maximum amount that a binder could hold is the amount that should be employed, a skilled person is directly led to believe that the example is in fact the maximum. If there are circumstances in which a higher loading of particles could be employed, such circumstances would be surprising. The skilled person, too, contemplates that the patent is valid and that the inventor has therefore given

the highest loading that any of the listed resins could bear. Therefore there is no suggestion to look at higher loadings with the resins employed by Texier.

In the present invention the applicants have found that loadings which are significantly higher than Texier's maximum loading can be employed when a composition is applied as taught in the application. The claimed method, utilizing compositions having loadings of about 80% and higher is particularly surprising in view of the fact that Texier clearly leads the skilled person to believe that 75% is the maximum magnetic particle loading that a binder can bear.

Applicants submit therefore, that claims 81-85 are patentable over Texier, U.S. Patent No. 6,881,450.

CONCLUSION

Claims 1, 4-7, 13, 31-34, 36, 37, 75, 79-85 are pending in the application. The claims are in condition for allowance. Applicants respectfully request reconsideration and an early allowance of the claims as presented. Should any issues remain, the attorney of record may be reached at (952)563-3011 to expedite prosecution of this application.

Respectfully submitted,

VIDAS, ARRETT & STEINKRAUS

Date: September 6, 2005

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